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THE 30-15 INTERMITTENT FITNESS ASSESSMENT AS A PREDICTOR OF INJURY RISK IN POLICE RECRUITS

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Police recruits with lower intermittent metabolic fitness as measured by the 30-15 Intermittent Fitness Test are at a greater risk of sustaining an injury or illness during police recruit training.

INTRODUCTION

Literature suggests that military recruits with poor aerobic fitness are more likely to fail to complete basic military training (1). A tool to measure aerobic fitness, the 20 metre Progressive Shuttle Run Test has been found to predict injury and failure to complete training in military populations (1,2). This assessment is currently employed by the military to identify recruits at risk of sustaining an injury during initial training (1).

While police officers may be required to utilise aerobic endurance on duty, research suggests that the physiological demands on the average police officer may also be anaerobic in nature. Typically, police officers are required to run short distances at maximal effort to 'get to the problem', followed by explosive tasks such as take downs, wrestling, pushing and pulling and bending and twisting to 'control and remove the problem' (3).

As police recruit training is designed to prepare police officers for operational duties, and therefore includes tasks akin to daily police work, the purpose of this study was to investigate the relationship between intermittent fitness as measured by the 30-15 Intermittent Fitness Assessment (IFT) and a recruit's risk of sustaining an injury during initial training.

METHODS

At commencement of training all police recruits were required to undertake a series of allocated fitness assessments. These assessments were conducted by police Physical Training Instructors (PTI). Initial recruit 30-15 IFT results were used to provide a measure of intermittent metabolic fitness. Recruits then completed a 12-week police training program which included marksmanship training, defensive training and weekly fitness training. Illness/Injury data was captured by the police college injury surveillance system using the standard accident and incident form in accordance with normal police college injury / illness reporting processes.

Statistical Analysis

SPSS Version 20 statistical software package (SPSS Inc., Delaware, USA) was used to conduct an independent sample t-test between cohorts classified by injury/illness status and to undertake a logistic regression to evaluate the relationship between fitness level and injuries/illnesses sustained. Significance was set at $p < 0.05$.

Ethical Approval

Ethical approval for this research was provided by Bond University Human Resources Ethics Committee (BUHREC).

RESULTS

Retrospective data from 219 police recruits who volunteered to participate in the study were analysed. In total, 56 police recruits from this cohort sustained an injury/illness during training. Mean 30-15 IFT scores for injured recruits were significantly ($t(247)=7.045$, $p<0.001$) lower ($m=15.7 \pm 1.13$ levels) than mean scores for uninjured recruits ($m=16.9 \pm 1.71$ levels). The logistic regression showed that the 30-15 score was significant in the prediction of

recruit injury/illness and equated to: Ln(inj)=7.456-.521x30-15score. Due to limited data size, the resultant cut off score of 16 levels (15.65 levels), while relatively strong, was limited to a correct classification of 74% of the cohort.

DISCUSSION

The findings of this study are similar to those of previous research that have found lower levels of fitness to be associated with an increase in injury risk to tactical personnel undergoing training. Unlike other research however, this study employed an intermittent metabolic fitness test (30-15 IFT) rather than a continuous metabolic fitness test (20 metre Progressive Shuttle Run Test). While further research is needed to increase the strength of prediction, the 30-15 IFT may be of benefit as a training risk identifier to organisations that train tactical personnel who perform tasks that are intermittent in nature.

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